Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A method of determining interference between channels in a Digital Subscriber Line (DSL) transmission system employing Discrete Multitone (DMT) modulation comprising:
determining a power mask level per channel P(k);
obtaining a channel impulse response (h(n)) after implementation of a time equalization (TEQ) algorithm;
zeroing [[~~M main~~]] an integer number (M) of main coefficient values of the channel impulse response to produce a residual impulse response (h'(n));
obtaining from the residual impulse response (h'(n)) a corresponding residual impulse spectrum (H'(k));
and multiplying the per channel power mask level and the residual impulse spectrum (H'(k)) to obtain a cross channel interference (I(k)) level.

2. (Previously presented) The method according to claim 1 wherein a Fast Fourier Transform (FFT) is employed to obtain said residual impulse spectrum (H'(k)).

3. (Currently amended) A method of estimating cross channel interference I(k) in a Discrete Multitone (DMT) communication system implemented in a Digital Subscriber Line (DSL) application, said DMT communication system employing inter-symbol cyclic prefix [[(M)]] and Time Equalization (TEQ), the method comprising:
a) measuring a total channel impulse response h(n) after TEQ;
b) zeroing ~~M main coefficients~~ an integer number (M) of main coefficient values [[~~from~~]] of the channel impulse response h(n) to produce a residual impulse response (h'(n));
c) performing Fast Fourier Transform (FFT) analysis on ~~the result of step b)~~ the residual impulse response (h'(n)) to obtain a corresponding residual impulse spectrum (H'(k)); and
d) ~~obtaining I(k) by~~ multiplying the ~~result of step c)~~ residual impulse spectrum (H'(k)) with a maximum power per channel value to obtain cross channel interference level (I(k).

4. (Currently amended) A method of allocating bits per channel in a DMT communication system implemented in a DSL application, said system employing inter-symbol cyclic prefix and

Time Equalization, said method comprising;
performing a first bit allocation algorithm to obtain a first bit per channel value and a first power per channel level;
obtaining a cross channel interference value based on a measured impulse response;
obtaining a noise value by adding the cross channel interference value to an interference noise value;
obtaining a second power mask per channel level based on a pre-calculated power per channel level; and
implementing a second bit allocation algorithm utilizing said noise value, a signal to noise ratio and said second power mask per channel level to obtain a final bit per channel allocation.

5. (Previously presented) The method according to claim 4, wherein a second power mask per channel level is derived by said second bit allocation algorithm.

6. (Currently amended) A Digital Subscriber Line (DSL) transmission system employing Discrete Multitone (DMT) modulation, having means for determining interference between channels, comprising:
means to determine a power mask level per channel P(k);
means to obtain a channel impulse value h(n) after implementation of a time equalization (TEQ) algorithm;
means for zeroing [[~~M main~~]] an integer number (M) of main coefficient values of the channel impulse response to produce a residual impulse response (h'(n));
means for obtaining from the residual impulse response (h'(n)) a corresponding residual impulse spectrum (H'(k)); and
a multiplier to multiply the per channel power mask level and [[a]] the residual impulse spectrum (H'(k)) to obtain a cross channel interference (I(k)) level.

7. (Currently amended) A Discrete Multitone (DMT) communication system implemented in a Digital Subscriber Line (DSL) application, said DMT system employing inter-symbol cyclic prefix [[(M)]] and Time Equalization (TEQ), and having cross-channel interference (I(k)) estimating means comprising:
a) measurement means to measure a total channel impulse response h(n) after TEQ;
b) means to zero ~~M main coefficients~~ an integer number (M) of main coefficient values from the channel impulse response h(n) to obtain a residual impulse response (h'(n));
c) means to perform Fast Fourier Transform (FFT) analysis on the ~~result of step b)~~ residual impulse response (h'(n)) to obtain a corresponding residual impulse spectrum (H'(k)); and
d) means ~~to obtain I(k) by~~ for multiplying the ~~result of step c)~~ the residual impulse spectrum (H'(k))

with a maximum power per channel value to obtain a cross channel interference level (I(k)).

8. (Currently amended) A DMT communication system implemented in a DSL application employing inter-symbol cyclic prefix and Time Equalization, said system having means for allocating bits per channel comprising;
means for performing a first bit allocation algorithm to obtain a first bit per channel value and a first power per channel level;
means for obtaining a cross channel interference value based on a measured impulse response;
means for obtaining a noise value by adding the cross channel interference value to an interference noise value;
means for obtaining a second power mask per channel level based on a pre-calculated power per channel level; and
means for implementing a second bit allocation algorithm utilizing said noise value, a signal to noise ratio and said second power mask per channel level to obtain a final bit per channel allocation.

9. (Currently amended) A receiver for use in a Digital Subscriber Line (DSL) transmission system employing Discrete Multitone (DMT) modulation, the receiver having interference determining means comprising:
means to determine a power mask level per channel P(k);
means to obtain a channel impulse value h(n) after implementation of a time equalization (TEQ) algorithm;
means for zeroing [[~~M main~~]] an integer number (M) of main coefficient values of the channel impulse response to produce a residual impulse response (h'(n));
means for obtaining from the residual impulse response (h'(n)) a corresponding residual impulse spectrum (H'(k)); and
a multiplier to multiply the per channel power mask level and [[a]] the residual impulse spectrum (H'(k)) to obtain a corresponding cross channel interference (I(k)) level.

10. (Previously presented) A receiver for use in a Discrete Multitone (DMT) communication system implemented in a Digital Subscriber Line (DSL) application, said DMT system employing inter-symbol cyclic prefix [[(M)]] and Time Equalization (TEQ), the receiver having cross-channel interference (I(k)) estimating means comprising:
a) measurement means to measure a total channel impulse response h(n) after TEQ;
b) means to zero ~~M main coefficients~~ an integer number (M) of main coefficient values selected from the channel impulse response h(n) to produce a residual impulse response (h'(n));
c) means to perform Fast Fourier Transform (FFT) analysis on the ~~result of step b)~~ residual impulse

response (h'(n)) to obtain a corresponding residual impulse spectrum (H'(k)); and

d) means to obtain cross-channel interference (I(k)) by multiplying the ~~result of step c)~~ residual impulse spectrum (H'(k)) with a maximum power per channel value.

11. (Currently amended) A receiver for use in a DMT communication scheme implemented in a DSL application employing inter-symbol cyclic prefix and Time Equalization, said receiver having means for allocating bits per channel comprising;

means for performing a first bit allocation algorithm to obtain a first bit per channel value and a first power per channel level;

means for obtaining a cross channel interference value based on a measured impulse response;

means for obtaining a noise value by adding the cross channel interference value to an interference noise value;

means for obtaining a second power mask per channel level based on a pre-calculated power per channel level; and

means for implementing a second bit allocation algorithm utilizing said noise value, a signal to noise ratio and said second power mask level per channel [[~~level~~]] to obtain a final bit per channel allocation.